

Hand Grenades for Extinguishing Fire.

A number of German servants have been recently engaged in investigations into the manufacture of these new weapons against fire. One of the first grenades put on the market was found to contain some free carbonic acid gas — under feeble pressure a considerable sediment of carbonate or bicarbonate of soda and a liquid containing in solution common salt and chloride of ammonium, also sulphate of ammonium. Since this was made, however, the composition has been simplified, and Dr. Geissler has made the following three analysis. In Heyward's hand-grenade the bottle was found to contain a yellowish, slightly turbid aqueous liquid, containing in solution 15.7 per cent. of chloride of magnesium, with the usual impurities of crude salt. The contents weighed 760 gram 450 gram 1 pound. In Hardeu's hand-grenade the contents weighed 555 gram. This was a yellowish, somewhat turbid aqueous liquid, containing in solution 19.46 per cent of common salt, and 8.88 per cent. of chloride of ammonium. In Schoenberg's "Feuertod" the contents weighed 440 gram and was a slightly turbid, almost colorless liquid, containing 1.66 per cent. of carbonate of soda and 6.43 per cent of common salt. In connection with this subject two formulæ are given in the Pharmaceutische Centralhalle by Dr. Eng. Dietrich. Both are intended to extinguish fire, one by with drawing or consuming oxygen, the other by coating the combustible objects with a protecting crust. The former, or "dry fire extinguisher," is made as follows. Nitrate of potassium, powdered, 59 parts; sulphur, powdered, 36 parts; charcoal, powdered, 5 parts, and colcothar 1 part. These are dried thoroughly and then mixed and fitted into pasteboard boxes, each holding about 5 pounds. Through an orifice in the side a fuse or quick match is fixed, which extends some four inches inward and 6 inches outward, and fastened on the outside. These extinguishers are intended for closed rooms, and are said to act automatically. Dr. Dietrich says that he has tried them, and found their effect excellent. The liquid fire extinguisher is made of chloride of calcium, crude, 20 parts, common salt, 5 parts, and water 75 parts. This solution can be thrown into the fire by a hand pump or in ordinary bottles. The burning portions become incrustated and cease to be combustible. With these receipts persons could very well make their own solutions and keep them in convenient places, together with hand pumps for projecting the liquid.



THE SHORTEST ROUTE !
 — FROM —
 WINNIPEG AND ALL PARTS OF CANADA
 — TO —
British Columbia
 BY THE
NORTHERN PACIFIC RAILWAY.

For information, Maps, Folders, etc., apply to the address
P. P. Groat, CHAS. S. FEE,
 Gen. Emigration Agent, Gen. Passenger Agent
 St. Paul. St. Paul.

The CHICAGO, MILWAUKEE & ST. PAUL R'Y

Is the Fast Mail Short Line from St. Paul and Minneapolis, via La Crosse and Milwaukee, to Chicago, and all points in the Eastern States and the Canadas.

It is the only line under one management between St. Paul and Chicago, and is the finest equipped Railway in the Northwest.

It is the only line running Sleeping Cars with luxurious Smoking Rooms, and the Finest Dining Cars in the world, via the famous "River Bank Route," along the shores of Lake Pepin and the beautiful Mississippi River to Milwaukee and Chicago. Its trains connect with those of the Northern line at the Grand Union Depot at St. Paul. No Change of Cars of any class between St. Paul and Chicago.

For Through Tickets, Time Tables and full information, apply to any Coupon Ticket Agent in the Northwest.

R. MILLER, Gen. Manager, J. F. TUCKER, Asst. Gen. Manager; A. V. H. CARPENTER, Gen. Pass. Agent; GEO. H. HEAFFORD, Asst. Gen. Pass. Agent, Milwaukee, Wis.; W. H. DIXON, Asst. Gen. Pass. Agent, St. Paul, Minn.

CHAS. N. BELL, Commercial Agt., 407 Main St., Winnipeg, Man.

All Aboard for ONTARIO and THE EAST

Purchase joint Tickets via the famous

Albert Lea Route,

It has become deservedly the POPULAR LINE between

St. Paul, Minneapolis and Chicago!

MOST COMFORTABLE DAY COACHES.

Pullman Palace Sleeping Cars and Palace Dining Cars.

WINNIPEG PASSENGERS are landed in Chicago 2 1/2 hours earlier than those traveling via other routes.

The route is through the famed Corn and Wheat producing district of the west, and the scenery is unsurpassed. Connections made in Union Depots. 150 lbs. of baggage checked free. Rates always as low as the lowest.

Get through tickets, maps and time tables from Ticket Agents of connecting lines in the Northwest or write to

J. A. McCONNELL, Trav. Pass. Agt., F. Boyd, Gen. Traffic & Pass. Agt., Minneapolis, Minn.

THE ROYAL ROUTE. Chicago and Northwestern Railway.

GOING EAST. Regular Express trains leave Minneapolis at 1.00 p.m. and 8.10 p.m.; and St. Paul, 1.30 p.m. and 8.60 p.m. arriving in Chicago at 7.00 a.m. and 1.00 p.m.

REGUL. EXP. TR. LEAVE CHICAGO AT 11.20 a.m. and 10.30 p.m., arriving at St. Paul at 6.30 a.m. and 2.25 p.m., and Minneapolis at 7.15 a.m. and 8.10 p.m.

"SHORT LINE LIMITED."

Leave Minneapolis 7 p.m., St. Paul 7.35 p.m., arrive Chicago 10.30 a.m. Leave Chicago 7.30 a.m. arrive St. Paul 7.6 a.m., Minneapolis 8.30 a.m. This is the finest train that runs and makes the distance 419 miles between supper and breakfast time.

GOING NORTHWEST. Trains leave St. Paul for Sioux City, Omaha, Kansas City and San Francisco at 6 p.m. and Minneapolis at 6.40 p.m. daily.

Passengers over the Royal Route have all the luxuries of Modern Railway travel, Palace Dining Cars, Luxurious Smoking Room Sleepers and Elegant Day and Night Coaches for Passengers who do not ride in Sleeping Cars, with no change of cars for any class of passengers between Minneapolis, St. Paul and Chicago, and No Change of Cars between St. Paul and Council Bluffs, with Through Sleepers to Kansas City. If you wish the best traveling accommodation always buy tickets over the Royal Route.

F. B. CLARKE, Gen. Traff. Man., St. Paul. T. W. TEASDALE, Gen. Pass. Agt., St. Paul. S. C. Strickland, Gen. Agt., Leland House Bldg., Winnipeg.

The People's Line.

FARGO & SOUTHERN RAILWAY

Now completed between

FARGO AND ORTONVILLE,

Is prepared to handle both FREIGHT and PASSENGER TRAFFIC with promptness and safety. Connecting at Ortonville with the Chicago Milwaukee & St. Paul system, the Fargo and Southern thus makes another GREAT THROUGH LINE to all Eastern and Southern States. The People's Line is superb in all its appointments, steel rails, elegant coaches, and its rates are always low and time as quick as other lines. Two Through Passenger Trains daily each way between Fargo and St. Paul without change connecting at Union Depot, St. Paul, with all eastern and southern lines. When you GO EAST or COME WEST try the Fargo and Southern.

Trains leave Fargo for Minneapolis, St. Paul and intermediate stations at 7.00 p.m. and 7.30 a.m. Arrive at Fargo from St. Paul and Minneapolis at 8.00 a.m. and 5.20 p.m.

Tickets for sale at all principal stations for St. Paul, Minneapolis, Chicago and all eastern and southern states. For further information address

A. V. H. CARPENTER, Gen. Passenger Agent.

NIAGARA FALLS AIR LINE !!



The Chicago & Grand Trunk & Grand Trunk Railways

Form what is popularly known as the

NIAGARA FALLS AIR LINE FOR ALL POINTS EAST.

They run a world train daily from Chicago to Buffalo, crossing Suspension Bridge and passing NIAGARA FALLS IN BROAD DAYLIGHT, with through Pullman Cars to New York without change. SLIDING SEATS BETWEEN CHICAGO AND DETROIT.

PULLMAN CARS WITHOUT CHANGE.—Chicago to Detroit, Bay City, S. Gray, Buffalo, Niagara Falls, New York, Toronto, Montreal and Boston.

Geo. D. REEVE, Traffic Manager,

W. J. SPICER, Comptroller